

## **REMARKS**

This is in response to the Office Action mailed February 12, 2003. Claim 17 has been amended. Claims 1-21 are currently pending and at issue.

Claim 17 has been amended to specify that the claimed method is directed to the treatment of "oxidative stress" in neuronal cells. Support for this amendment is found in the specification at page 1, lines 9-11, and page 5, lines 27-29. No new matter has been added.

Reconsideration of the application is respectfully requested.

## **Obviousness-Type Double Patenting**

Claims 1-21 have been provisionally rejected under the judicially created doctrine of obviousness-type double patenting over claims 6-24 of Applicants' co-pending U.S. Patent Application No. 10/012,730. Applicants respectfully request that this rejection be held in abeyance because the conflicting application has not yet issued as a patent.

## **Non-Enablement**

Claim 17 has been rejected under 35 U.S.C. § 112, first paragraph, as not enabled by the specification. The Examiner contends that the specification does not support a method of treatment that could generally apply to any condition in neuronal cells.

Claim 17 has been amended to specify that the claimed method is directed to "the treatment of oxidative stress in neuronal cells." This is enabled by the specification at, for example, page 1, lines 9-11, and page 5, lines 27-29. Thus, claim 17 recites a method of treatment for the condition of oxidative stress in neuronal cells, which is a method enabled by the specification. Accordingly, this rejection should be withdrawn.

### Obviousness

Claims 1-19 have been rejected under 35 U.S.C. § 103(a) as obvious over Martin (*The Use of Antioxidants in Healing*, XP000578697, Dermatol Surg 1996, 22:146-160) in view of Izumi et al. (U.S. Patent No. 5,395,822) ("Izumi"). Martin is cited by the Examiner as disclosing a composition comprised of pyruvate, an antioxidant, and lipids that is used to reduce cellular injury and heal wounds. The Examiner cites Izumi as disclosing the use of pyruvate to treat neurodegeneration associated with disorders that interfere with the energy metabolism of neurons.

The rejection is respectfully traversed, and reconsideration is requested.

Martin discloses a composition comprised of pyruvate, an antioxidant (vitamin E), and fatty acids, which is used to treat cellular damage in skin cells and white blood cells (p. 158, second column, last paragraph). This reference does not teach the application of its composition to any central nervous system disorders. Furthermore, there is no suggestion in Martin that the disclosed composition could be used to treat such disorders.

Izumi fails to cure the deficiencies of the primary reference. Izumi discloses the use of pyruvate to prevent or treat neurodegeneration, which is associated with ischemia (col. 4, lines 43-44) or other disorders that interfere with neuronal energy metabolism (abstract, claims). Izumi does not teach any use of a composition that combines pyruvate with at least one antioxidant and at least one lipid, as presently claimed. Rather, this reference is limited to the use of pyruvate as a monotherapy and not in combination with other components.

In fact, Izumi teaches away from the use of a composition that includes antioxidants because antioxidants suppress reactions promoted by oxygen. A key feature of Izumi's invention is that pyruvate is able to react with oxygen in order to produce energy that prevents or arrests neurodegeneration and promotes neuronal recovery (col. 5, lines 1-7; col. 7, lines 27-30). Thus, a person of ordinary skill in the art would have considered it counterproductive to add an antioxidant to Izumi's composition. Accordingly, Izumi teaches away from the presently claimed method of treatment that uses a composition comprised of at least one antioxidant.

Consequently, the combination of Martin and Izumi fails to teach or suggest the presently claimed method for treating oxidative stress in neuronal cells. Therefore, this rejection should be withdrawn.

Claims 20-21 have been rejected under 35 U.S.C. § 103(a) as obvious over Martin. The Examiner cites Martin as disclosing a composition comprising pyruvate, an antioxidant, and a lipid. According to the Examiner, a person of ordinary skill in

the art would have been motivated to mix the above composition in a buffered saline solution, and additionally centrifuge or filter the solution, because such steps are conventionally employed in the pharmaceutical arts.

The rejection is respectfully traversed, and reconsideration is requested.

Claims 20 and 21 recite a method of providing a "therapeutically effective amount" of three components (pyruvate, at least one antioxidant, and at least one lipid) and mixing the components together in a buffered saline solution. The specification defines a "therapeutically effective amount" of each component as an amount "necessary for the neuroprotective composition to prevent and/or reduce injury of a neuronal mammalian cell" (p. 7, lines 2-5; p. 8, lines 8-11; and p. 9, lines 14-16).

Martin does not teach or suggest any compositions for treating neuronal cell injury. Rather, Martin is limited to the treatment of cellular damage in skin cells and white blood cells only (p. 158, second column, last paragraph). Therefore, in view of Martin, a person of ordinary skill would not have known how to determine the amounts of each component that would be "therapeutically effective" in preventing or reducing neuronal cell injury. Accordingly, Martin cannot be relied upon as rendering claims 20 and 21 obvious. Therefore, this rejection should be withdrawn.

**Conclusion**

In view of the above amendments and remarks, it is respectfully requested that the application be reconsidered and that all pending claims be allowed and the case passed to issue.

If there are any other issues remaining, which the Examiner believes could be resolved through either a Supplemental Response or an Examiner's Amendment, the Examiner is respectfully requested to contact the undersigned at the telephone number indicated below.

Respectfully submitted,

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